

```

      CACTGTGCGTATTGTGATGGGCGCTACGACCAGATCGGCTTCCCCAACCTCGAGCTCCAA
1  -----+-----+-----+-----+-----+-----+-----+-----+ 60
      GTGACACGCGATAACACTACCGCGGATGCTGGTCTAGCCGAAGGGGTTGGAGCTCGAGGTT
a      H C A Y C D G A Y D Q I G P P N L E L Q -

      GTCCACAACCTCCTGGCTCTTCTTCCCTTGGCAACGCTTCTACCTCTACTTCCACGAGAGG
61  -----+-----+-----+-----+-----+-----+-----+-----+ 120
      CAGGTGTTGAGGACCGAGAAGAAGGGAACCGTGGCGAAGATGGAGATGAAGGTGCTCTCC
a      V H N S W L F F P W H R F Y L Y F H E R -

      ATCTCGGAAGCTCATAGGCGACGACACTTTGCGCCCTCCCTTTCTGGAACCTGGGACCGG
121 -----+-----+-----+-----+-----+-----+-----+-----+ 180
      TAGGAGCCCTTTGAGTATCCGCTGCTGTGAAAGCGGGAGGGAAGACCTTGACCTTGCGC
a      I L G K L I G D D T F A L P F W N N D A -

      CCGGCGGCGATGAAGCTGCGCTGATCTACGCGACCCCTTGTCTCGCTCTATGACAAG
181 -----+-----+-----+-----+-----+-----+-----+-----+ 240
      GGGCGGCGGTACTTCCAGCGGAGCTAGATGCGGCTGGGAAGCAGGAGCGAGATACTGTTT
a      P G G M K L P S I Y A D P S S S L Y D K -

      TTTGCGACGCCAAGCACCAGCGCCAGTCTCTGTCGACCTCGACTACAACGGAACCGAC
241 -----+-----+-----+-----+-----+-----+-----+-----+ 300
      AAAGCGCTGCGGTTGTTGGTGGCGGTCAGGAGCAGCTGGAGCTGATGTTGCTTGGCTG
a      F R D A K H Q P P V L V D L D Y N G T D -

      CCTAGTTTCACCGACGCGAGGCGAGTCGATCAGAACCTCAAGATCATGTACCGG-CAGGTG
301 -----+-----+-----+-----+-----+-----+-----+-----+ 360
      GGATCAAAGTGGCTGCGTCTGCTCTAGCTAGTCTTTGGAGTTCTAGTACATGGCGCTCCAC
a      P S F T D A E Q I D Q N L K I M Y R Q V -

      ATCTCCAAACGGCAAGACCGCGTTGCTCTTCTTAGGCTCGGCTTACCGTGGCGGGACAAC
361 -----+-----+-----+-----+-----+-----+-----+-----+ 420
      TAGAGGTTGCGGTTCTGCGGCAACGAGAAGAATCCGAGCGAATGGCACGGCCGCTGTTG
a      I S N G K T P L L F L G S A Y R A G D N -

      CCAAAACCCGCGCGCGGCTCGCTCGAGAACATACCACACGCGCCCGTCCACGGGTGGACT
421 -----+-----+-----+-----+-----+-----+-----+-----+ 480
      GGTTTGGGGCCGCGCCGAGCGAGCTCTTGTATGGTGTGCGGGGCAAGTGCCCACTGA
a      P N P G A G S L E N I P H G P V H G W T -

      GCGACAGAAGCCAACCCAACTCTGAGGACATGGGCAACTTCTACTCCGCGGGGCGCGAC
481 -----+-----+-----+-----+-----+-----+-----+-----+ 540
      CCGCTGTCTTCCGTTGGGTTAGAGCTCCTGTACCGTTGAAGATGAGGCGCCCGCGCTG
a      G D R S Q P N L E D M G N F Y S A G R D -

      CCTATCTTCTTGGCCCAACATTCAAATGTGATGCGATGTGG
541 -----+-----+-----+-----+-----+-----+-----+-----+ 582
      GGATAGAAGAAGCGGTTGGTAAGTTTACAGCTAGCGTACACC
a      P I F F A H H S N V D R M W -

```

FIGURE 1

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TTGCCGTTTTTGGCAATTGGGACGGCGCCCGGCGGCATGAAGCTGCCGTGATCTAOCGCCGAC
1 -----+-----+-----+-----+-----+ 60
AACGGCAAACCTTAACCTGCGCGGGCGCGCTACTTGCACGGCAGCTAGATGCGGCTG
a   L P P W N N W D A P G G M K L P S I Y A D -

CCTTCGTCTCTGCTCTATGACAAGTTTCGCGACGCCAAGCACCAGCCGCGGTCCTGCTC
61 -----+-----+-----+-----+-----+ 120
GGAAGCAGGAGCGAGATACTGTTCAAAGCGCTGCCGTTGCTGGTGGCGCGCCAGGAGCAG
a   P S S S L Y D K F R D A K H Q P P V L V -

GACCTCGACTACAAOCGAACCGACCCCTACTTTCAOCGAOCGAGAGCAGATCGATCAGAAC
121 -----+-----+-----+-----+-----+ 180
CTGGAGCTGATGTTGCCTTGGCTGGGATCAAAGTGGCTGCGTCTGCTCTAGCTAGTCTTG
a   D L D Y N G T D P S F T D A E Q I D Q N -

CTCAAGATCATGTACCGGCAGGTGATCTCCAAOCGCAAGACGCCGTTGCTCTTCTTAGGC
181 -----+-----+-----+-----+-----+ 240
GAGTTCTAGTACATGGCCGTCCTAGAGGTTGCCGTTCTGCGGCAACGAGAAGAATCCG
a   L K I M Y R Q V I S N G K T P L L P L G -

TCGGCTTACCGTGCCGGCGACAACCCAAACCCCGCGCGGGCTGCTCGAGAACATACCA
241 -----+-----+-----+-----+-----+ 300
AGCCGAATGGCAOCGCCGCTGTTGGGTTTGGGGCCGCGCCGAGCGAGCTCTGTATGGT
a   S A Y R A G D N P N P G A G S L E N I P -

CAOCGCCCCCGTCCACGGGTGGACTGGCGACAGAAGCCAAACCAATCTCGAGGACATGGGC
301 -----+-----+-----+-----+-----+ 360
GTGCGCGGGCAGGTGCCCACTGACCGCTGCTTCGGTTGGGTTAGAGCTCCTGTACCG
a   H G P V H G W T G D R S Q P N L E D M G -

AACTTCTACTCCGCGGGCGCGACCCCTATCTTCTCGCCCAACCATTCAAATGTCGATAGC
361 -----+-----+-----+-----+-----+ 420
TTGAAGATGAGGCGCCCGCTGGGATAGAAGAAGCGGGTGGTAAGTTTACAGCTATCG
a   N P Y S A G R D P I F F A H H S N V D S -

ATGTGG
421 ----- 426
TACACC
a   M W -

```

FIGURE 2

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      OTTGCTCTTCTTAGGCTCGGCTTACCGTGC CGGCGACAACTCCAAACCCCGCGCGGGCTC
1  -----+-----+-----+-----+-----+-----+-----+-----+ 60
      CAACGAGAAGAATCCGAGCCGAATGGCACGGCCGCTGTTGGGTTTGGGGCGCGCCCGAG
b      L L F L G S A Y R A G D N P N P G A G S -

      GCTCGAGAACATACCAACA CGGCCCCGTCCACGGGTGGACTGGCGACAGAAACCAACCCAA
61  -----+-----+-----+-----+-----+-----+-----+-----+ 120
      CGAGCTCTTGATGGTGTGCGGGGCAGGTGCCCACTGACCGCTGTCTTTGGTTGGGTT
b      L E N I P H G P V H G W T G D R N Q P N -

      TCTCGAGGACATGGGCAACTTCTACTCCGCGGGCGCGACCTATCTTCTTGGCCACCA
121 -----+-----+-----+-----+-----+-----+-----+-----+ 180
      AGAGCTCCTGTACCGTTGAAGATGAGGCGCCCCCGCGCTGGGATAGAAGAAGCGGGTGGT
b      L E D M G N F Y S A G R D P I F F A H H -

      TTCAAACGTGACCGCATGTGGTACTTGTGGAAGAAGCTCGGCGGAAGCATCAGGACTT
181 -----+-----+-----+-----+-----+-----+-----+-----+ 240
      AAGTTTGCAGCTGGCGTACACCATGAACACCTTCTTCGAGCGGCCCTTCGTAGTCTCTGAA
b      S N V D R N W Y L W K K L G G K H Q D F -

      TAAOGATAAGGACTGGCTCAACACCACCTTCTCTTCTAOGACGAGAATGCTGACTTAGT
241 -----+-----+-----+-----+-----+-----+-----+-----+ 300
      ATTGCTATTCTGACCGAGTTGTGGTGAAGGAGAAGATGCTGCTCTTACGACTGAATCA
b      N D K D W L N T T F L P Y D E N A D L V -

      TCGAGTCACCCTCAAGGACTGCTTGACCGCGAGTGGCTTGGTTACGATTACCAAGCGT
301 -----+-----+-----+-----+-----+-----+-----+-----+ 360
      AGCTCAGTGGGAGTTCTGACGAAAGTCCGCTCACCGAAGCAATGCTAATGGTTCTGCA
b      R V T L K D C L Q P E W L R Y D Y Q D V -

      CGAGATCCCGTGGCTGAAGACCGGCGGACTCCCAAAGCCTTGAAGGCGCAGAAACCGC
361 -----+-----+-----+-----+-----+-----+-----+-----+ 420
      GCTCTAGGGCACCGACTTCTGGGCGGCTGAGGGTTTCGGAAGTTCGCGTCTTTTGGCG
b      E I P W L K T R P T P K A L K A Q K T A -

      AGCGAAACACTGAAAGCTACAGCAGAGACGCGCTTCCCGGTGACGCTGCAATCCGCGGT
421 -----+-----+-----+-----+-----+-----+-----+-----+ 480
      TCGCTTTTGTGACTTTCGATGTGCTCTTCGCGCAAGGGCCACTGCGAGCTTAGCGCCA
b      A K T L K A T A E T P F P V T L Q S A V -

      GAGCAOGACGGTGAGGAGGCCAAGGTATCGAGGAGCGGCAAGGAGAAGGAAGAGGAAGA
481 -----+-----+-----+-----+-----+-----+-----+-----+ 540
      CTGCTGCTGCCACTCCTCGGGTTCATAGCTCCTCGCGTTCCTCTTCTTCTCTCTTCT
b      S T T V R R P K V S R S G K E K E E E E -

      GGAGGTCTCATCGTGGAGGGGATCGAGTTGACCGCGACTACTTCAATAAGTTGACGT
541 -----+-----+-----+-----+-----+-----+-----+-----+ 600
      CCTCCAGGAGTAGCACCTCCCCTAGCTCAAGCTGGCGCTGATGAAGTATTTCAAGCTGCA
b      E V L I V E G I E F D R D Y F I K F D V -

      CTTGCTGAACGCCACCGAGGGTGAGGGCATCAOGCGGGCGCCAGCGAGTTGCGGGCGAG
601 -----+-----+-----+-----+-----+-----+-----+-----+ 660
      GAAGCACTTGGGTGGCTCCCACTCCCGTAGTGGCGCCCGGTCGCTCAAGCGCCCGTC
b      F V N A T E G E G I T P G A S E F A G S -

      CTTGCTCAACGTCCCGCACAAGCACAGCACAGCAAGAAGGAGAAGAAGCTGAAGACGAG
661 -----+-----+-----+-----+-----+-----+-----+-----+ 720
      GAAGCAGTTGCAGGGCGTGTTCGTGTTCTGTCGTTCTTCTTCTTCTGACTTCTGCTC
b      F V N V P H K H K H S K K E K K L K T R -

```

FIGURE 3-1

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GCTCTGCCTGGGGATCACTGACCTGCTCGAGGACATCGGGGCGGAGGACGACGACAGCGT
721 -----+-----+-----+-----+-----+ 780
CGAGACGGACCCCTAGTGACTGGACGAGCTCCTGTAGCCCCGCTCCTGCTGCTGTCCCA
b   L C L G I T D L L E D I G A E D D D S V -
GCTCGTCACCATCGTCCCGAAAGCCGAAAGGGCAAGGTGTGGTCCCGGGCCTCCGCAT
781 -----+-----+-----+-----+-----+ 840
CGAGCAGTGGTAGCAGGGCTTTCCGCCCTTTCCGTTCCACAGCCAGCGGCGGAGGCGTA
b   L V T I V P K A G K G K V S V A G L R I -
CGATTTCCCAAAATGAAGTAATACTATATATTTCTACTACCTATCAAGGAAAATAAAGC
841 -----+-----+-----+-----+-----+ 900
GCTAAAGGGTTTAACTTCATTATGATATATAAAGATGATGGATAGTTCTTTTATTTTCG
b   D F P N * S N T I Y F Y Y L S R K I K A -
CGCACCATCGTAACAAAAAAAAAAAA
901 -----+-----+-----+-----+ 925
GCTGGTAGCATGTTTTTTTTTTT
b   A P S * Q K K K -
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MAP of: bpo34 check: 1607 from: 1 to: 925 August 22, 1997

FIGURE 3-2



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GCTGTGTCCTGGGAATCACCGACCTGCTCGAGGACATCGGCGCGGAGGAAGACGACAGGT
721 -----+-----+-----+-----+-----+ 780
CGACACAGACCCCTTAGTGGCTGGACGAGCTCCTGTAGCCGCGCCTCCTGTGCTGTGCA
b   L C L G I T D L L E D I G A E D D D S V -
GCTCGTCACCATCGTGCCGAAGGCAGGCAAAGGAAAGGTGTCCTCGGCGGTCTTCGGAT
781 -----+-----+-----+-----+-----+ 840
CGAGCAGTGGTAGCACGGCTTCGGTCCGTTTCCTTTCCACAGGCAGCCGCCAGAAGCCTA
b   L V T I V P K A G K G K V S V G G L R I -
TGACTTTTCCAAGTGAGGAAATAAAGAATTACGTGCCGTGCCCTGCTTTCAATGTACGA
841 -----+-----+-----+-----+-----+ 900
ACTGAAAAGGTTCACTCCTTTATTTTCTTAAGTGACCGGCACGGACGAAAGTTACATGCT
b   D F S K * G N K R I H V P C L L S M Y E -
ATAAAATAAGAGTGCAATCATCACCGACCATGGTTCTACTTTAAAAAAAAAAAAAAAAAAAA
901 -----+-----+-----+-----+-----+ 960
TATTTTATTCTCACGTAGTAGTGCTGGTACCAAGATGAAATTTTTTTTTTTTTTTTTTTT
b   * N K S A S S P T M V L L * K K K K K -
MAP of: bpo35 check: 1637 from: 1 to: 960 August 25, 1997
```

FIGURE 4-2

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GATCCGACGTTTGGCGTTGCCATATTGGAACTGGGATCATCCAAAGGGCATGCGTTTGCCA
1 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 60
CTAGGCTGCAAAACGCAACGGTATAACCTTGACCTAGTAGGTTTCCCGTACGCAACGGT
a D P T F A L P Y W N W D H P K G M R L P -

CACATGTTTGATCAACCAAAACGTTACCCCTGATCTTTACGATCCAAGACGTAACCAAGAA
61 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 120
GTGTACAAACTAGTTGGTTTGACATGGGACTAGAAATGCTAGGTTCTGCATTGGTTCTT
a H M F D Q P N V Y P D L Y D P R R N Q E -

CACCGCGGTTCTGTAATCATGGACCTTGGTCATTTTGGTCAAGACGTGAAAGGAACTGAC
121 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 180
GTGGCGCCAAGACATTAGTACCTGGAACCAAGTAAACCAAGTTCTGCACCTTTCTTGACTG
a H R G S V I M D L G H F G Q D V K G T D -

TTGCAATGATGAGCAATAACCTTACTCTAATGTATCGTCAATGATTACCAATTCACCA
181 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 240
AACGTTTACTACTCGTTATTGGAATGAGATTACATAGCAGTTTACTAATGGTTAAGTGGT
a L Q M M S E N L T L M Y R Q M I T N S P -

TGTCCCAACTCTTTTTCGGTAAGCCATATTGTACGGAAGTTGGACCCAAACAGGGCAG
241 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 300
ACAGGTGTTGAGAAAAAGCCATTCCGTATAACATGCCTTCAACCTGGGTTTGGTCCCGTC
a C P Q L F F G K P Y C T E V G P K P G Q -

GGAGCTATTGAAAACATCCCTCATACTCCTGTCCACATTGGGGTTGGTAGTAAGCCTAAT
301 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 360
CCTCGATAACTTTTGTAGGGAGTATGAGGACAGGTGTAAACCAACCATTCATTGGATTAA
a G A I E N I P H T P V H I W V G S K P N -

GAGAATAACTCTAAAAACGGTGAAGATATGGGAAATTTCTATTGAGCTGGTAAGGATCCT
361 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 420
CTCTTATTGACATTTTGGCACTTCTATACCCCTTTAAAGATAAGTCGACCATTCCTAGGA
a E N N C K N G E D M G N F Y S A G R D P -

GCTTTCTATAGTCACCATGCAAATGTAGATCGCATGTGGACAATATGGAACATTAGGA
421 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 480
CGAAAGATATCAGTGGTACGTTTACATCTAGCGTACACCTGTTATACCTTTTGTAAATCCT
a A P Y S H H A N V D R M W T I W K T L G -

GGAAAACGCAAGGACATCAACAAGCCAGATTATTTGAACACTGAGTTCTTTTCTACGAC
481 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 540
CCTTTTGGGTTCCGTAGTTGTTCCGTCCTAATAAACTTGTGACTCAAGAAAAAGATGCTG
a G K R K D I N K P D Y L N T E F F F Y D -

GAAAA
541 ----- 545
CTTTT
a E -

```

FIGURE 5

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C L G G K R R D L T H K D W L N M E F V V

## FIGURE 6



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TGCATTGTGCGTATTGCAACGATGCTTACACAATGGGTGACCAAAAGTTACAAGTTACCC
1 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 60
ACGTAACACGCATAACGTTGCTACGAATGTGTTACCCACTGGTTTTCAATGTTCAAGTGG
c      H C A Y C N D A Y T M G D Q K L Q V H Q -

AATCGTGGCTTTTCTTCCGTTTCATAGATGGTACTTGTACTTCTACGAGAGAATCTTGG
61 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 120
TTAGCACCGAAAAGAAGGGCAAAGTATCTACCATGAACATGAAGATGCTCTCTTAGAACC
c      S W L F F P F H R W Y L Y P Y E R I L G -

GCTCCCTCATCGATGATCCAACCTTTTGCTCTGCCATATTGGAACCTGGGACCATCCAAGCG
121 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 180
CGAGGGAGTAGCTACTAGGTTGAAAACGAGACGGTATAACCTTGACCCTGGTAGGTTCCG
c      S L I D D P T F A L P Y W N W D H P S G -

GCATGCGTTTGCTGCTATGTTGATGTGGAAGGTTCTTCCCTCTACGATGCAAGACGTA
181 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 240
CGTAGCGCAACGGACGATACAAGCTACAGCTTCCAAGAAGGGAGATGCTACGTTCTGCAT
c      M R L P A M F D V E G S S L Y D A R R N -

ATCCACATGTCCGTAATGGAACCATAATCGATCTTGGTTTTTGGGTGATGAAGTCAAAA
241 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 300
TAGGTGTACAGGCATTACCTTGGTATTAGCTAGAACCAAAAAGCCACTACTTCAGTTTT
c      P H V R N G T I I D L G F F G D E V K T -

CTAATGAAATACAGATGATAACTAACAACCTAATTCTAATGTATGTCAAATGATAACTA
301 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 360
GATTACTTTATGTCTACTATTGATTGTTGAATTAAGATTACATAGCAGTTTACTATTGAT
c      N E I Q N I T N N L I L M Y R Q M I T N -

ATGCTCCATGCCCGCTGTGTTCTTGGGAGAGCCTTACAGATTGGATCTAAACCCAATC
361 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 420
TAGGAGGTACGGGCGACAACAAGAAGCCTCTCGGAATGTCTAAGCCTAGATTGGGTTAG
c      A P C P L L F F G E P Y R F G S K P N P -

CGGGCAGGGAACCATGAAAACATTCTCATACTCCGTTTACATTTGGACTGGTACTG
421 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 480
GCCCCGTCCTTGGTAACTTTTGTAAAGGAGTATGAGGCCAAGTGTAAACCTGACCATGAC
c      G Q G T I E N I P H T P V H I W T G T V -

TGCGGTGTACGGATTTGGGTAATGTGTGCCATCATAAGGTGAGGATATGGGTAAATTTCT
481 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 540
ACGCCACATGCCCTAAACCCATTAAACACAGGATGATGCCACTCCTATACCCATTAAAGA
c      R C T D L G N C V P S Y G E D M G N F Y -

ACTCAGCTGGTTTAGACCCAGTTTTTTACAGCCACCACGCCAATGTGGACCGCATGTGGA
541 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 600
TGAGTCGACCAAAATCTGGGTCAAAAATGTGGTGGTGGGTTACACCTGGGTACACCT
c      S A G L D P V F Y S H H A N V D R M W N -

ATGAATGGAAGCACTAGGAGGGAAAAGAAGGGATCTCACAGACAATGATTGGTTAAACT
601 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 660
TACTTACCTTTGGTATCCTCCCTTTCTTCCCTAGAGTGTCTGTTACTTAAACCAATTTGA
c      E W K A L G G K R R D L T D N D W L N S -

CGGAGTTCTTTTCTACGACGAAAA
661 -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 685
GCCTCAAGAAAAAGATGCTGCTTTT
c      E F F F Y D E -

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FIGURE 7

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TGCATTGTGCGTACTGCGACGGCGGTATGACCAAATGGCTTCCCCGATCTCGAGATCC
1 -----+-----+-----+-----+-----+-----+-----+-----+ 60
ACGTAACACGCATGAOGCTGCCGCGCATACTGGTTTAGCGAAGGGGCTAGAGCTCTAGG
c   H C A Y C D G A Y D Q I G F P D L E I Q -

AGATCCACAACCTGGTGGCTCTTCTTTCCTTGGCACGGGTTCTACCTCTACTTCAACGAGC
61 -----+-----+-----+-----+-----+-----+-----+-----+ 120
TCTAGGTGTTGAGCACCGAGAAGAAAGGAACCGTGGCCAGATGGAGATGAAGTTGCTCG
c   I H N S W L F P P W H R F Y L Y F N E R -

GCATACTCGGAACTTATCGGCGACGACAGTTGCGCTGCCTTTCTGGAAC TGGGACG
121 -----+-----+-----+-----+-----+-----+-----+-----+ 180
CGTATGAGCCCTTTGAATAGCGCTGCTGTGCAAGCGGACGGAAGACCTTGACCCCTGC
c   I L G K L I G D D T F A L P F W N W D A -

CGCGGGGGGCATGCAGTTCCCGTCTATCTACAGGACCTTCATCCTGCTATATGACA
181 -----+-----+-----+-----+-----+-----+-----+-----+ 240
GCGGCCCCCGTACGTCAAGGGCAGATAGATGTGCTGGAAGTAGGAGCGATATACTGT
c   P G G N Q F P S I Y T D P S S S L Y D K -

AGCTGCGTGATGCGAAGCACCAGCGCGGACTTTGATTGACCTCGACTACAATGGCACCG
241 -----+-----+-----+-----+-----+-----+-----+-----+ 300
TCGACGCACTACGCTTCGTGGTGGGCGCTGAACTAAGTGGAGCTGATGTTACGCTGSC
c   L R D A K H Q P P T L I D L D Y N G T D -

ATCCTACCTTCTCCCTGAAGAACAGATTAACCACAACCTGGCGGTCATGTACGACAGG
301 -----+-----+-----+-----+-----+-----+-----+-----+ 360
TAGGATGGAAGAGGGGACTTCTTGTCTAATTGGTGTGGAGGGCAGTACATGGCTGTCC
c   P T F S P E E Q I N H N L A V M Y R Q V -

TGATATCCAGTGGAAAGACACCAGAGCTGTTTATGGGCTCAGCGTACCGCGCGGTGACC
361 -----+-----+-----+-----+-----+-----+-----+-----+ 420
ACTATAGGTACCTTTCTGTGCTCTGACAAATACCGAGTGGCATGGGCGGCGCACTGG
c   I S S G K T P E L F M G S A Y R A G D Q -

AGCCTGACCCCGGCGCAGGTTCTGTAGAGCAGAAGCCGCAAGGCCCGGTGCATGTGTGGA
421 -----+-----+-----+-----+-----+-----+-----+-----+ 480
TCGGAAGTGGGCGCGCTCCAGACATCTCGTCTTCGGCGTGCGGGGCCAGTACACACCT
c   P D P G A G S V E Q K P H G P V H V W T -

CAGGTGATGCGAACCAGCCCAATCGCGAAGACATGGGCAAGCTCTACTCGGCGGCGTGGG
481 -----+-----+-----+-----+-----+-----+-----+-----+ 540
GTCCACTAGCGTTGGTGGGTTAGCGCTTCTGTACCGTGGAGATGAGCCGCGCGCACCC
c   G D R N Q P N R E D M G T L Y S A A W D -

ACCCCGTTTTTTTTCGCACACCACGGCAACATCGACCGCATGTGGTACGTGTGGAGGAACC
541 -----+-----+-----+-----+-----+-----+-----+-----+ 600
TGGGGCAAAAAAGCGTGTGGTGGCGTTGTAGCTGGCGTACACCATGCACACCTCCTTGG
c   P V F F A H H G N I D R M W Y V W R N L -

TTGGCGGCAAGCACCGCAACTTCACCGACCCCGACTGGCTCAACGCGTCCCTTCTGTCT
601 -----+-----+-----+-----+-----+-----+-----+-----+ 660
AACCGCCCTTCGTGGCGTTGAAGTGGCTGGGGCTGACCGAGTTGCGCAGGAAGGACAAGA
c   G G K H R N F T D P D W L N A S F L F Y -

ACGACGAAA
661 -----+ 670
TGCTGCTTT
c   D E -

```

FIGURE 8

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TTGCGSTTTTGGAAATGGGACGGCGCGGGGGCATGCAGATCCCGCCATCTACGCCGAC
1 -----+-----+-----+-----+-----+-----+-----+-----+ 60
AACGGCAAAACCTTAACCCCTGCGCGGCCCCCGTACGTCTAGGGCCGGTAGATGCGGCTG
a L P F W N W D A P G G M Q I P A I Y A D -

GCTTCGTCCCGCTCTACGACAAGCTGCGCAATGCGAAGCACCAGCCGCGGACTTTGGTC
61 -----+-----+-----+-----+-----+-----+-----+-----+ 120
CGAAGCAGGGGCGAGATGCTGTTGAGCGGTTACGCTTGTGGTCCGCGGCTGAAACCAG
a A S S P L Y D K L R N A K H Q P P T L V -

GACCTCGACTACAAAGGCACCGACCGACCTTCACCCCCTGAGCAGCAGATGCCCCACAAC
121 -----+-----+-----+-----+-----+-----+-----+-----+ 180
CTGGAGCTGATGTTGCCGTGGCTGGCTGGAAGTGGGACTCGTCGTCTAGCGGGTGTG
a D L D Y N G T D P T F T P E Q Q I A H N -

CTCACCATCATGTACCGACAGGTGATATCCGCGGGGAAGACGCGGAGTTGTTTATGGGC
181 -----+-----+-----+-----+-----+-----+-----+-----+ 240
GAGTGGTAGTACATGGCTGTCCACTATAGGCGCGCCCTTCTGCGGCCTCAACAAATACCCG
a L T I M Y R Q V I S G G K T P E L F M G -

GCGGCGTACCGCGCGGGCGACGCGCCAGACCGGGGCGCAGGCACTCTAGAGCTCGTGCCG
241 -----+-----+-----+-----+-----+-----+-----+-----+ 300
CGCGCATGGCGCGCCCGCTGCGCGGTCTGGGCCCCGCTCCGTGAGATCTCGAGCAGGGC
a A A Y R A G D A P D P G A G T L R L V P -

CACAAACGATGCATTGTGGACCGGCGACCCCAACCAACCAACGACGAAGACATGGGC
301 -----+-----+-----+-----+-----+-----+-----+-----+ 360
GPGTTGTGCTACGTAAACACCTGGCCGCTGGGGTTGGTTGGGTTGCTGCTTCTGTACCGG
a H N T M H L W T G D P N Q P N D E D M G -

ACGTTCTACGCGCGGGCGGGGACCCCATCTTCTTCCGCCACCAAGCAACGTCCGACCGC
361 -----+-----+-----+-----+-----+-----+-----+-----+ 420
TGCAAGATGCGCCGCGCGCCCTGGGGTAGAAGAAGCGGGTGGTCCGTTCAGCTGGCG
a T P Y A A A R D P I P P A H H G N V D R -

ATGTGGTACGTGTGGCGAAACTCGGGGGCACGCACCGCGATTTCACGACCCCGACTGG
421 -----+-----+-----+-----+-----+-----+-----+-----+ 480
TACACCATGCACACCGCCTTTGAGCCCCCGTGGTGGCGCTAAAGTGGCTGGGGCTGACC
a M W Y V W R K L G G T H R D F T D P D W -

CTCAACGCGTCTTCTCTTCTACGACGAGAAGCGCGAGCTCGTCCGCGTCAAAGTAAAG
481 -----+-----+-----+-----+-----+-----+-----+-----+ 540
GAGTTGCGCAGGAAGGAGAAGATGCTGCTCTTGGCGGTGAGCAGGGCGAGTTTCATTTC
a L N A S F L P Y D E N A Q L V R V K V K -

GACTGCTTGAGCGCGACCGCGCTGCGGTACACGTACCAGGAAGTCGACATCCCGTGGATC
541 -----+-----+-----+-----+-----+-----+-----+-----+ 600
CTGACGAACTCGCGGCTGCGCGACGCCATGTGCATGGTCTGCGAGCTGTAGGGCACCTAG
a D C L S A D A L R Y T Y Q D V D I P W I -

AGTGOGAAGCCGACGCGGAAGAAAACACCGGGGGCGCTGCGCCTTCCACGACAGGGCT
601 -----+-----+-----+-----+-----+-----+-----+-----+ 660
TCACGCTTCCGCTGCGGCTTCTTTTGTGGCCCCCGGAGCGCGAAGGTGCTGTCTCCGA
a S A K P T P K K T P G G A A P S T T E A -

ATATTCCGGTGGTGTGCTGATAAGCCGGTGAGCTCTACGGTGGCGAGGCCGAAGACGGGG
661 -----+-----+-----+-----+-----+-----+-----+-----+ 720
TATAAAGCCACCAAGACCTATTCCGCCACTCGAGATGCCACCGCTCGGGCTTCTGCCCC
a I F P V V L D K P V S S T V A R P K T G -

```

FIGURE 9-1

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```

AGGAGTACTGGGGAGGAGGAGGTGTTGGTGGTGGAGGGAATCGAGCTGGACAAGGACGTG
721 -----+-----+-----+-----+-----+ 780
TCCTCATGACCCCTCCTCCTCCACACCAACCACTCCCTTAGCTCGACCTGTTCTCTGCAC
a   R S T G E E E V L V V E G I E L D K D V -
GCCGTGAAGTTGACGTGTATATAAAGCGCGGACACGAAGGGGTGGGGCCGGAGGGG
781 -----+-----+-----+-----+-----+ 840
CGGCACCTTCAAGCTGCACATATAATTGCGCGGCTGTGCTTCCCCACCCCGGCTCCGC
a   A V K F D V Y I N A P D N E G V G P E A -
ACCGAGTTGCGAGGGAGCTTCTGTCAGGTGCGGCACAAAGCAAGAAGGGGAAGAGGAG
841 -----+-----+-----+-----+-----+ 900
TCGCTCAAGGTCCCTCGAAGCAGGTCCACGGCGTGTGCTGTTCTTCCCTTCTTCTC
a   S E F A G S P V Q V P H K H K K G K K E -
AAGGCGAGGATTAAAAAGAGCGCTCAGGCTCGGGATAACGGACCTGCTCGAGGACATCGGC
901 -----+-----+-----+-----+-----+ 960
TTCCGCTCCTAATTTTCTGCGAGTCCGAGCCCTATTGCTGGAAGAGCTCCTGTAGCCG
a   K A R I K T T L R L G I T D L L E D I G -
GCCGAGGACGACGAGAGCGTCTGCTCAAGCTCTGCGCGAGGATAGGCGAGGGGTTGGTC
961 -----+-----+-----+-----+-----+ 1020
CGGCTCCTGCTGCTCTCGCAGAGCAGTGGAGCAAGGCTCCTATCCGCTCCCCAACCAG
a   A E D D E S V L V T L V P R I G E G L V -
AAGGTTGGTGGGCTAAGGATCGATTTCTCCAAGTGATCAGCAGCAAATTAAGTATACATG
1021 -----+-----+-----+-----+-----+ 1080
TTCCAACCAACCGATTCTAGCTAAAGAGGTTCACTAGTCTGCTGTTTAAATGATATGTAC
a   K V G G L R I D F S K * S A A N * L Y M -
AAAGTAAAAAAATTCATTTACCTACCTATAGAGAGAATAAATGCGTATGTAATCTGC
1081 -----+-----+-----+-----+-----+ 1140
TTTCATTTTTTTAAAGTAAATGGATGGATATCTTCTCTTATTTACGCATACATTAGAGC
a   K V K K I A F T Y L * K R I N A Y V I C -
CCCATTTGTCACTTTTAAATTTCTGAGCGTGTCTGAATGAGAGTTGCATGCATGGCGGC
1141 -----+-----+-----+-----+-----+ 1200
GGGTAAACAGTGAAAATTAAAGAGCTCGCACAAGACTTACTCTCAACGTACGTACCGCGC
a   P I C H F * F L E R V L N E S C M H A R -
AGCCATAATGCCTGGTATAGTGTAGTAGTTTAGGCGTGGATAAGTATAACGTACGTATGC
1201 -----+-----+-----+-----+-----+ 1260
TCGTTATTACGGACCATATCACATCATCAATCCGCACCTATGCATATTGCATGCATACG
a   S H N A W Y S V V V * A W I R I T Y V C -
ATGTATAGGAATAATGATGAGTTTACTATGCAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
1261 -----+-----+-----+-----+-----+ 1319
TACATATTCCTTATTACTCAATGATACGTTTMTTTTTTTTTTTTTTTTTTTTTT
a   M Y K E * * * V Y Y A K K K K K K K K K -

```

MAP of: pin2join check: 3759 from: 1 to: 1319 June 19, 1997

FIGURE 9-2

b C D C A Y D Q Y C F F D L R I Q I H N S -

### FIGURE 10-1

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```

ACTTATCGGCGACGACACGTTCCGCGCTGCCTTTCTGGAACCTGGGACGCGCCCGGGGSCAT
721 -----+-----+-----+-----+-----+-----+-----+-----+ 780
TGAATAGCCGCTGCTGTGTGCAAGCGGACGGAAAGACCTTGACCCTGCGCGGGCCCCCGTA
b   L I G D D T F A L P F W N W D A P G G M -

GCAGTTCCCGTCTATCTACACAGACCCCTTCATCCTCGCTATATGACAAGCTGCGTGATGC
781 -----+-----+-----+-----+-----+-----+-----+-----+ 840
CGTCAAGGGCAGATAGATGTGTCTGGGAAGTAGGAGCGATATACTGTTGACGCACTACG
b   Q F P S I Y T D P S S S L Y D K L R D A -

GAAGCACCAGCCGCGACTTTGATTGACCTGACTACAAATGGCACCAGATCCTACCTTCTC
841 -----+-----+-----+-----+-----+-----+-----+-----+ 900
CTTCGTGGTGGGCGGCTGAACTAACTGACGCTGATGTTACCGTGGCTAGGATGGAAGAG
b   K H Q P P T L I D L D Y N G T D P T F S -

CCCTGAAGAACAGATTAAACCAACCTGCGCGTCACTGACGACAGGTGATATCCAGTGG
901 -----+-----+-----+-----+-----+-----+-----+-----+ 960
GGGACTTCTTGTCTAATTGGTGTGGAGCGGCGAGTACATGGCTGTCCACTATAGGTCACC
b   P E E Q I N H N L A V M Y R Q V I S S G -

AAGACCCAGAGCTGTTTATGGGCTCAGCGTACCGCGCGGCTGACCAGCCTGACCCCGG
961 -----+-----+-----+-----+-----+-----+-----+-----+ 1020
TTTCTGCGGTCTCGACAAATACCCGAGTGCATGGCGCGGCCACTGGTGGGACTGGGGCC
b   K T P E L F M G S A Y R A G D Q P D P G -

CGCAGGCTCTGTAGAGCAGAAGCCGACCGGCCCGGTGCATGTGTGGACAGGTGATCGCAA
1021 -----+-----+-----+-----+-----+-----+-----+-----+ 1080
GCGTCCGAGACATCTCGTCTTGGGCGTGCCGGGCCACGTACACACCTGTCCACTAGOGTT
b   A G S V E Q K P H G P V H V W T G D R N -

CCAGCCCAATCGCGAAGACATGGGCACGCTCTACTCGGCGGCGTGGGACCCCTCTTCTT
1081 -----+-----+-----+-----+-----+-----+-----+-----+ 1140
GGTCCGGTTAGCGCTTCTGTACCCGTGCGAGATGAGCCGCGCACCTTGGGGCAGAAGAA
b   Q P N R E D M G T L Y S A A N D P V F F -

CGCACACCAACGGCAACATCGACCGCATGTGTTAGTGTGGAGGAACCTTGGCGGCAAGCA
1141 -----+-----+-----+-----+-----+-----+-----+-----+ 1200
GCGTGTGGTGGCGGTTGTAGCTGGCGTACACCATGCACACCTCCTTGGAAACCGCGTTCTG
b   A H H G N I D R M W Y V W R N L G G K H -

CCGCAACTTCACCGACCCCGACTGGCTCAACGCGTCTTCTCTGTCTATGATGAGAATGC
1201 -----+-----+-----+-----+-----+-----+-----+-----+ 1260
GGCGTTGAAGTGGCTGGGGCTGACCGAGTTTCGCGAGGAAGGACAAGATACTACTCTTACG
b   R N F T D P D W L N A S P L F Y D E N A -

CCAGCTCGTCCGTGTTAAAGTAAAAGACTGCTTAGAGGCCGACGCAATGCGGTACACATA
1261 -----+-----+-----+-----+-----+-----+-----+-----+ 1320
CGTCGAGCAGGCACAATTTTCATTTTCTGACGAATCTCCGGCTGCGTTACGCCATGTGTAT
b   Q L V R V K V K D C L E A D A M R Y T Y -

CCAGGATGTAGAGATCCCGTGGCTCAAAGCAAAGCCGAAGCCAAAGAGOGCCCTACAGAA
1321 -----+-----+-----+-----+-----+-----+-----+-----+ 1380
GGTCTTACATCTCTAGGGCACCGAGTTTCGTTTCGGCTGCGGTTTCTCGCGGATGTCTT
b   Q D V E I P W L K A K P T P K S A L O R -

GATAAAGAGCAAGGTATCGACGCTGAAGGCAACACCAAGGGGGAGCAGACTACCACAGC
1381 -----+-----+-----+-----+-----+-----+-----+-----+ 1440
CTATTTCTCGTTCCATAGCTGCGACTTCGTTGTGGTTCCCCCTGCTGCTGATGGTGTGCG
b   I K S K V S T L K A T P R G T T T T T A -

AGAGACTACATTTCCGGTGGTGTGGATAAGCCGGTGAGTGCAACAGTGGCTAGACOGAA
1441 -----+-----+-----+-----+-----+-----+-----+-----+ 1500
TCTCTGATGTAAAGGCCACACGACCTATTCCGCCACTCAOGTTGTACCGATCTGGCTT
b   E T T F P V V L D K P V S A T V A R P K -

```

FIGURE 10-2

b V A W C N R Y S T L P P I H L F L E E K

### FIGURE 10-3

CACGCCACCCCTTCTCTCTCTCTCTCTCTGGTCTACTGAACAGTAATAGACATGTCCCT  
 1 ----- 60  
 GTCCCGTGGGAAGAGAGAGAGAGAGAGAGACCAGATGACTTGTCTATTATCTGTACAGGGA  
 T P P F S L S L S L V Y \* T V I D H S L -  
 GCTGTGAACCTTAGCTTCACCGGTGCTTCTCTGTCATGCCCTCTCCAACGGGAAAGGTC  
 61 ----- 120  
 CGACAACCTTGAGATCGAAGTGGCCACGAAGGAGACGTACGGAGGAGGTTCCTTTTCCAG  
 L L N S S F T G A S S A C L L Q R E R S -  
 CCGCGGCCGCTGCCCTCCACGTCCTGGCGTGACATGCCGCCAGGGCAGTAATGGTGACCG  
 121 ----- 180  
 GCGCGCGCGCGCGGAGGTGCAGGGACCGCACTGTACGGCGGTCCCGTCATTACCACTGGC  
 R R R R L H V P G V T C R Q G S N G D R -  
 CAGAGATGCCGCCCCCAGCAGCAGTGGCGGCCGCTGCTGGATCCGCGCCACATGCTGTT  
 181 ----- 240  
 GTCTCTACCGCGGGGGGTCTGCTAGCGCGCGCGACGACCTAGCCGGCTGTACGACAA  
 R D A A P Q Q Q S P P L L D R R D H L L -  
 GGGTTTAGGAGGGCTTTACGGCGTGACCGCAGGACCCAAGGTTCTGGCGGCCCGGATAAT  
 241 ----- 300  
 CCCAAATCTCTCCGAAATGCCCGCACTGGCGTCTGGGTTCCAAGACCGCGCGGCTATTA  
 G L G G L Y G V T A G P K V L A A P I H -  
 GCGCGCGGATCTGTCCAAGTGCTACCCCTGCCACCGCACTGCCCTCGACAACAAATGCTG  
 301 ----- 360  
 CGGCGCGCTTAGACAGGTTACGATGGGACGGTGGCGTGGACGGCAGCTGTCTTTACGAC  
 P P D L S K C Y P A T A P A L D N K C C -  
 CCGCGCTTAGCACCCTCGGCGAGACGATCTCGGAGTACAGCTTCCCTGCTAGCCCCCTCCG  
 361 ----- 420  
 GGGCGGAATGCTGGGGCCGCTCTGCTAGAGCTTCTATGTCGAAGGGACGATCCGGGGAGGC  
 P P Y D P G E T I S E Y S F P A T P L R -  
 GGTGCGCGCGCGCGCCCATATCGTGAAGGACGATCAGGAGTATATGGACAAGTACAAGGA  
 421 ----- 480  
 CCACGCGCGCGCGCGGGTATAGCACTTCTGCTAGTCTCATATACCTGTTTATGTTCT  
 V R R P A H I V K D D Q E Y H O K Y R E -  
 GGCAGTGAGGAGGATGAAGAATCTGCCGCGAGACCACCTTGGAACCTACTACCAGCAGGC  
 481 ----- 540  
 CCGTCACTCTCTTACTTCTTACACGGCGCTCTGCTGGGAACCTTCATGATGGTGGTCCG  
 A V R R H K N L P A D H P W N Y Y Q Q A -  
 GAACATCCACTGCCAGTATTGCAACTACGCCCTACCACCAGCAAAATACCGACGACGTGCC  
 541 ----- 600  
 CTTGTAGGTGACGGTCATAACGTTGATGCGGATGGTGGTGGTTTATGGCTGCTGCACGG  
 N I H C Q Y C N Y A Y H Q Q N T D D V P -  
 CATCCAGGTCCACTTCAGCTGGATCTTCTCCCATGGCACCGCTACTACCTCCACTCTTA  
 601 ----- 660  
 GTAGGTCCAGGTGAAGTCGACCTAGAAGGACGCTACCGTGGCGATGATGGAGGTGAAGAT  
 I Q V H F S W I F L P W H R Y Y L H F Y -  
 CGAAAGGATCCTCGGCAAGCTCATCGACGACGACACCTTCACCATCCCATCTGGAACCTG  
 661 ----- 720  
 GCTTTCTTAGGAGCCGTTGAGTAGTGTCTGCTGGAAGTGGTAGGGTAAGACCTTGAC  
 E R I L G K L I D D D T F T I P F H H W -  
 GCACACCAAGGACGGGATGACGTTCCCGGCCATCTCCAGGATGCGGCATCCCGCTGTA  
 721 ----- 780  
 CCGTGGCTTCTGCTGCTTACTGCAAGGGCGGCTAGAGGGTCTACGCGGTAGGGGGGACAT  
 D T K D G K T F P A I F Q D A H S P L Y -  
 CGACCGGAGACGGGACCAAGCCAGCTCAAGGACGGTAAGATGCTCGACCTCAAGTACGG  
 781 ----- 840  
 GGTGGGCTCTGCTGGTGGTGGGTCAGTCTCTGCGGTTCTAGGAGCTGGAGTTCATGGC  
 D P R R D Q R H V K D D H I L D L E Y A -

FIGURE 11-1



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```

841 CTACACCGAAAACACTGCATCCGACAGCGAGATCATACGGGAGAACCTCTGCTTCATACA 900
-----
GATGTGGCTTTTGTGACGTAGGCTGTGCTCTAGTATGCCCTCTTGGAGACGAAGTATGT
Y T E N T A S D S E I I R E N L C F I Q -

901 GAAGACGTTCAAGCACAGCCTGTGCTGGCGGAACCTGTTTCATGGGGGATCCCGTGCGCGC 960
-----
CTTCTGCAAGTTCTGTGCGACAGCGACCGCTTGACAAGTACCCCTTAGGGCACGGCGG
K T F K H S L S L A E L F N G D P V R A -

961 GGGGAGAAAGGAGATCCAGGAGGCTAATGGGCAGATGGAAGTCATCCACAATGGCGGCA 1020
-----
CCCCCTCTTCTCTAGGTCTCTGATTACCGTCTACCTTCAGTAGGTGTTAAGCCGCGT
G E K E I Q E A N G Q N E V I H N A A H -

1021 CATGTGGGTGCGAGAGCTGGACCGATACAAGGAAAACATGGGGGACTTCTCCACCGCCGC 1080
-----
GTACACCCAGCCTCTCGGCTTGCCTATGTTCTTTGTACCCCTGAAGAGGTGGCGGCG
M W V G E P D G Y K E N M G D P S T A A -

1081 CCGCGATTCTGTTTTCTTCTGCCACCATTCGAATGTGACCGCATGTGGGACATCTACCG 1140
-----
GGCGCTAAGACAAAAGAAGACGGTGCTAAGGTTACAGCTGGCGTACACCCCTGTAGATGGC
R D S V F F C H H S N V D R M W D I Y R -

1141 CAACCTCCGCGGCAACCGCTCGAGTTCGAAGACAACGACTGGTTGGACAGCACCTTCTCT 1200
-----
GTTGGAGGCGCGCTTGGCGCAGCTCAAGCTTCTGTTGCTGACCAACCTGCTCGTGAAGGA
N L R G N R V E P E D N D W L D S T F L -

1201 CTTCCACGACGAGAACGAACAGCTCGTCAAAGTCAAGATGAGCGACTGCTCAACCCGAC 1260
-----
GAAGGTGCTGCTCTTCTGCTGCGAGCAGTTTCACTTCTACTCGCTGACCGAGTTGGGCTG
F H D E N E Q L V K V K H S D C L N P T -

1261 CAAGCTTCGGTACACGTTCCGAGCAAGTTCCCCCTCCCATGGCTGGGCAAAATCAATTGCCA 1320
-----
GTTGGAAGCCATGTGCAAGCTCGTTCAAGGGGAGGGTACCGACCCGTTTACTTAACGGT
K L R Y T F E Q V P L P W L G K I N C Q -

1321 GAAGACGGCAGAGACGAAGTCCAAGGCCACGACGGAGCTGTGCTGACCGCGGTGAACGA 1380
-----
CTTCTGCCGTCTCTGCTTCAGGTTCCGGTGCTGCTGCGCTGACAGCGACTGCGCGCACTTGCT
K T A E T K S K A T T E L S L T R V N E -

1381 ATTGGGGACGACGGCCAGGCACTGACCGGAGCAACCCGCTGCGGGTGATCTGTGCAAG 1440
-----
TAAGCCCTGCTGCCGGTCCGTGAGCTGCGCTCGTTGGGCGACGCCCACTAGCACCGTTC
P G T T A Q A L D A S N P L R V I V A R -

1441 GCGGAAGAAGAACCAGCAAGAAGAGGAGAAGCAAGAGAAGGTGGGGGTGATTTCAGATCAA 1500
-----
CGGCTTCTTCTTGGCGTTCTTCTTCTCTTCTGTTCTCTTCCACCCCTACTAAGTCTAGTT
P K K N R K K K E K Q E K V G V I Q I K -

1501 GGATATTAAGGTGACCACCAACGAGACAGCTCGCTTCGACGTTATGTCGCGGTTCCTTA 1560
-----
CCTATAAATTCACCTGGTGGTTGCTCTGTGCGAGCGAAGCTGCAGATACAGCGCCAAGGAAT
D I K V T T N E T A R F D V Y V A V P Y -

1561 CGGTGACCTCGCCGGACCCGACTACGGCGAGTTCCGCGGCGAGCTACGTGAGGCTGGCGCA 1620
-----
GCCACTGGAGTCCGCTGGCTGATCCGCTCAAGCGCTCGTTCGATGCACTTCGACCCGCT
G D L A G P D Y G E F A G S Y V R L A H -

1621 TAGGATGAAGGGAAGCGACGGGACCGAAAAGCAGGGTTCAGGAAGAAGCGAAAACTCAA 1680
-----
ATGCTACTTCCCTTGGCTGCGCTGGCTTCTGCTCCCGGGGTTCTTCTTCCCTTTGAGTC
R M K D S D G T E K Q D P K K K G K L H -

```

FIGURE 11-2

[illegible]

### FIGURE 11-3

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[illegible]

### FIGURE 12-1

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```
TTATATTGGATCGAGGCTCGTGGTATCTTTTGATAAGAGTAAGTCCATAAAATTAGAAG
781 ----- 840
AATATAACCTAGCTCCGAGCACCATAGAAAACTATTCTCATTCAAGGTATTTAAATCTTC

AAGAATCATGTTCTTTATTTATATTAAATCAATGTGATTTCGCCAAAAAAAAAAAAAAAA
841 ----- 900
TTCTTAGTACAAGAAATAAATATAATTTAGTTACACTAACAGGTTTTTTTTTTTTTTTT
```

---

FIGURE 12-2

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1 TGCACCTGTCGGTATTGCCAGCGCGGTATGACCAAATCGGCTTCCCCGATCTCGAGATCC 60  
 c ACGTGACACGCATAACGCTGCCCGGCATCTGGTTAGCCGAAGGGGCTAGAGCTCTAGG  
 H C A Y C D G A Y D Q I G F P D L E I Q -  
 61 AGATCCACAACCTCGTGGCTCTTCTTTCCCTTGGCACCGGTTCTACCTCTACTCCAACGAGC 120  
 c TCTAGGTGTTGAGCACCGAGAAGAAAGGAACCGTGGCCAAGATGGAGATGAGGTTGCTCG  
 I H N S W L F F P W H R P Y L Y S N E R -  
 121 GCATACTCGGGAAACTTATCGCGCAGCACGTTCCGCTGCGCTTTCTGGAAC TGGGACG 180  
 c CGTATGAGCCCTTTGAATAGCCGCTGCTGTGCAAGCCGACGGAAGACCTTGACCCCTGC  
 I L G K L I G D D T F A L P F W N W D A -  
 181 CGCCGGGGGGCATGCAAGTCCCGTCTATCTACACGGACCCCTTCATCCTCGCTATATGACA 240  
 c GCGGCCCCCGTACGTCAAGGGCAGATAGATGTGCTTGGGAAGTAGGAGCGATATACTGT  
 P G G M Q F P S I Y T D P S S S L Y D K -  
 241 AGCTGCGTGTATGCGAAGCACCAGCCCGGACTTTGATTGACCTCGACTACAATGGCACCG 300  
 c TCGACGCACCTACGCTTCGTGGTCCGCGGCTGAACTAACTGGAGCTGATGTTACCGTGGC  
 L R D A K R Q P P T L I D L D Y N G T D -  
 301 ATCCTACCTTCTCCCTGAAGAACAGATTAACCACAACCTCGCCGTCATGTACCGACAGG 360  
 c TAGGATGGAAGAGGGGACTTCTGTCTAATGGTGTGGAGCGGCAGTACATGGCTCTCC  
 P T F S P E E Q I N H N L A V M Y R Q V -  
 361 TGATATCCAGTGGAAAGACACCAGAGCTGTTTATGGGCTCAGCGTACCGCGCCGGTGACC 420  
 c -ACTATAGCTCACCTTTCTGTGGTCTCGACAAATACCCGAGTCCGATGGCGCGGCCACTCG  
 I S S G K T P E L F M G S A Y R A G D Q -  
 421 AGCCTGACCCCGGCGCAGGCTCTGTAGAGCAGAAGCCGACGCGCCCGGTGCATGTGTGGA 480  
 c TCGGACTGGGGCCCGCTCCGAGACATCTCGTCTTCGGCGTGGCGGGCCAGTACACACCT  
 P D P G A G S V E Q K P H G P V H V W T -  
 481 CAGGTGATCCCAACCAGCCCAATCGCGAAGACATGGGCACGCTCTACTCGGCGCGGTGGG 540  
 c GTCCACTAGCGTTGGTCCGGTTAGCGCTTCTGTACCCGTCGCGAGATGAGCCGCGCCACCC  
 G D R N Q P N R E D M G T L Y S A A W D -  
 541 ACCCCGCTCTTCTCGCACACCACGGCAACATCGACCGCATGTGGTACGTGTGGAGGAACC 600  
 c TGGGGCAGAAGAAGCGTGTGGTCCGTTGTAGCTGGCGTACACCATGCACACCTTCTTGG  
 P V F F A H H G N I D R M W Y V W R N L -  
 601 TTGGCGGCAAGCACCGCAACTTCACCGACCCCGACTGGCTCAACCGGCTCCTTCTGTCTT 660  
 c AACCGCCGTTCTGTGGCGTTGAAGTGGCTGGGCGTGACCGAGTTGCGCAGGAAGGACAAGA  
 G G K H R N F T D P D W L N A S F L F Y -  
 661 ATGATGAGAATGCGCAGCTCGTCCGTGTTAAAGTAAAAGACTGCTTAGAGGCCGACGCAA 720  
 c TACTACTCTTACCGCTCGAGCAGGCACAATTTCAATTTCTGACGAATCTCCGGCTGCGGTT  
 D E N A Q L V R V K V K D C L E A D A M -  
 721 TGCGGTACACATACCAGGATGTAGAGATCCCGTGGCTCAAAGCAAAGCCGACGCCAAGA 780  
 c ACGCCATGTGTATGGTCTACATCTCTAGGGCACCGAGTTTCGTTTCCGGTTCGGGTTCT  
 R Y T Y Q D V E I P W L K A K P T P K S -

FIGURE 13-1

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GCGCCCTACAGATAAAGAGCAAGGATATGACCCTGAAGGCACAACCAAAGGGGAGGCCA

781 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 840  
C CGCGGGATGTCTTCTATTTCCTCGTTCCCATAGCTGCGACTTCCOTTGTGGTTCCCCCTGCT  
A L Q R I K S K V S T L K A T P R G T T -  
  
CGACTACCACAGCAGAGACTACATTTCGGTG GTGCTGGATAAGCCCGTGA GTGCAACAG

841 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 900  
C GCTGATGGTGTCTCTGTATGTAAAGGCCACCACGACCTATTCCGCCACTCACGTTGTC  
T T T A E T T F P V V L D K P V S A T V -  
  
TGGCTAGACCGAAGGCCAGGAGGAGTGGGAAGGAGAAGGAAGAAGAGGAGGAGGTGTTGG

901 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 960  
C ACCGATCTGGCTTCCGGTCTCTCTACCCCTTCTCTCTCTCTCTCTCTCTCTCCACAACC  
A R P K A R R S G K E K E E E E E V L V -  
  
TGGTGGAGGGAATCGAGTTGGAGAAGGACGTGTTCTGTGAAGTTTGATGTGTATATAAACT

961 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1020  
C ACCACCTCCCCTTAGCTCAACCTCTCTCTG CACAAGCACTTCAAACTACACATATATTTGA  
V E G I E L E K D V F V K P D V Y I N S -  
  
CGCCGGACACGAAGGGCTGGGCCCGCAGCCGAGTGA GTTCGCAGGGAGCTTCGTCCACG

1021 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1080  
C GCGGCCCTCGTGTCTCCCAACCCCGGCCCTCCGCTCACTCAAGCGTCCCTCGAAGCAGGTGC  
P E H E G V G P E A S E F A G S P V H V -  
  
TGCCACACAAGCACAAGAAGGCGAAGAAGGGGAAGGAGATGGCCAGGATGAACACAAGGC

1081 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1140  
C ACGGTGTGTTCTGTGTTCTTCCGCTTCTTCCCTCTCTCTACCGGTCTCTACTTGTGTTCCG  
P H K H K K A K K G K E M A R M N T R L -  
  
TTAAGCTCGGGATAACGGACCTGCTCGAGGACATCGGCCGTGAGGACGACGAGAGCGTGC

1141 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1200  
C AATTGAGCCCTATTGCTTGGACGAGCTCTGTAGCCGCGACTCTGCTGCTCTCGCAGC  
K L G I T D L L E D I G A E D D E S V L -  
  
TCATCAGCTCGT GCCAGSAGCGSCAAGGGAATGGTGAAGGTTGGAGGGCTAAGGATTG

1201 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1260  
C AGTAGTGCAGACGCGGCTCTCGCGCTTCCCTTACCACTTCCAACCTCCCGATTCTTAAC  
I T L V P R S G K G N V K V G G L R I D -  
  
ATTTCCTCAAGTGATGAGCATATTGTGAAGAGAAAAATPGCATTTACCGCCCTATAGAAT

1261 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1320  
C TAAAGAGGTTCACTACTCGTATAACACTTCTCTTTTTAAACGTAATGGCGGGATATCTTA  
F S K \* \* A Y C E E K I C I Y R P I E S -  
  
CGAAAAATTCGCTATATGTCCCATTTATGTTTTTTTTTATTCTTCAAGCGTATTCAGAATA

1321 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1380  
C GCTTTTTAACGCATATACAGGGTAATAACAAAAAAAAATAAGAAGTTCGCATAAGTCTTAT  
K N C V Y V P L L F F L F F K R I Q N K -  
  
AGAGTTCGCTGCATGCACGCATGCAGCCATGTTGTGTAGTCGATATGTGGGGTATGTTT

1381 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1440  
C TCTCAACGCACGTACGTTCGCTACGTCGGTACAACAACATCAGCTATACACCCCATACAAA  
S C V H A R H Q P C C C S R Y V G Y V W -  
  
GGATCAGGGATAATGATGTGAAC TTGAATTAATTATTACACTCTGAGAATAAATTAGAG

1441 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1500  
C CCTAGTCCCTATTACTACACTTGAACCTTAATTAATAATGTGAGACTCTTATTTAATCTC  
I R D N D V N F E L I I T L \* E \* I R E -  
  
AGTTTATTATGCAAAAAAAAAA

1501 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1522  
C TCAATAATACGTTTTTTTTTT  
F I M O K K K -

### FIGURE 13-2

1 ACAACAAACCAGTGCCTGGTTTAGGTGTATTCACTATGCCACCCTCTCTAAACTAGCTT 60  
 TGTGTTTGGTCACGGACCAAATCCACATAAGTGATACCGGTGGGAGAGATTTGATCGAA  
 N K P V P G L G V F T M A T L S K L A S -  
 61 CCCCCAACCAATAACACCTCCACTCTCCCCGCTCCCTCTTTGCATGCTCCTTCTCTCACC 120  
 GGGGTTGGTTATTTGTGGAGGTGAGAGGGGCGAGGGAGGAAACGTACGAGGAAGAGAGTGG  
 P T N N T S T L P A P S P A C S P S H Q -  
 121 AAAAGCTTCACCACCACCTTCTCTCCCCGTAGGGGTCCCAAACCACCCCGTCATAAGA 180  
 TTTTCGAAGTGGTGGTGGGAAGGAGAGGGGACATCCCCAGGGTTTGGTGGGGCAGTATTCT  
 K L H H H L P L P C R G P K P P R H K I -  
 181 TCTCATGCAAAATCTAAGGAGCAACAAGAGAATGCCGACAAGCCTGCGGGCCGCATGACCC 240  
 AGAGTACGTTTAGATTCTCTGTTCTCTTACGGCTGTTGGAGCGCCCGCGTAGCTGG  
 S C K S K E Q Q E N A D K P A G R I D R -  
 241 GCCGCGACCTACTCTGGGCCCTCGGGGGCTTTACGGTGCCACCCTGCGGCTCGGGCTCA 300  
 CGGCGCTGGATGAGGACCCGGAGCCGCCGAAATGCCACGGTGGTGACCCGAGCCGGAGT  
 R D L L L G L G G L Y G A T T G L G L N -  
 301 ACCGTCGAGCGGCCGCCGCCCTATCCTGGCTCCCGACCTCTCAACTTGTGGGCCGCCCTG 360  
 TGGCAGCTCGCCGGCGGGGGATAGGACCGAGGGCTGGAGAGTTGAACACCCGGCGGAC  
 R R A A A A P I L A P D L S T C G P P A -  
 361 CCGACCTCCCTGCTCCGCCCGACCGACAGTTTGTCTGCCGCCCATACCAATCCACCATCA 420  
 GGTGGAGGGACCGAGGCGGGCTGGCTGTCAAACGACGGGCGGTATGGTTAGGTGGTAGT  
 D L P A S A R P T V C C P P Y Q S T I I -  
 421 TCGTCTTCAAGCTCCCCCGGATCTGCTCCGCTTCGGGTCCGGCCTGCGGCCCACTTGG 480  
 AGCAGAAGTTTCAGGGGGGGCTAGACGAGGCGAAGCGCAGGCGGGACGCGGGGTGAACC  
 V F K L P P R S A P L R V R P A A H L V -  
 481 TTGACGCGACTACCTGGCCAAGTATAAGAAGGCGGTGAGCTCATGAGGGCCCTGCGCG 540  
 AACTGCGGCTGATGGACCGGTTTATATTCTTCCGCCAGCTCGAGTACTCCCGGGACGGCC  
 D A D Y L A K Y K K A V E L M R A L P A -  
 541 CCGACGACCCCGCAACTTCGTACAGCAAGCGAAAGTGCACTGTGCGTACTGCGACGGCG 600  
 GGTGCTGGGCGGTTGAAGCATGTCTTCGCTTTCACGTGACACGCATGACGCTGCCGC  
 D D P R N F V Q Q A K V H C A Y C D G A -  
 601 CGTACGACCAAAATCGGCTTCCCCGATCTCGAGATCCAGATCCACAACCTCGTGGCTCTTCT 660  
 GCATGCTGGTTTAGCCGAAGGGGCTAGAGCTCTAGGTCTAGGTGTTGAGCACCGAGAAGA  
 Y D Q I G F P D L E I Q I H N S W L F P -  
 661 TTCCTTGGCACCAGGTTTACTCTTCAACGAGCGCATACTCGGGAAACTTATCGGTG 720  
 AAGGAACCGTGGCCAAGATGGAGATGAAGTTGCTCGCGTATGACCCCTTTGAATAGCCAC  
 P W H R F Y L Y F N E R I L G K L I G D -  
 721 ACGACACGTTTCGCGCTGCCTTCTGGAACCTGGGACGCGCCGGGGGGCATGCAGTTCCCGT 780  
 TGCTGTGCAAGCGCGACGGAAGACCTTGACCTGCGCGCCCCCGTACGTCAGGGGCA  
 D T F A L P F W N W D A P G G H Q F P S -

FIGURE 14-1

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```
CTATCTACACAGACCCTTCATCCTCGCTATATGACAAGCTGCGTGATGCGAAGCACCAGC
781 -----+-----+-----+-----+-----+-----+-----+ 840
GATAGATGTGTCTGGGAAGTAGGAGCGATATACTGTTGACGCACTACGCTTCGTGGTCTG
C   I Y T D P S S S L Y D K L R D A K H Q P -
CGCCGACTTTGATTGACCTCGACTACAATGGCACA
841 -----+-----+-----+-----+-----+-----+-----+ 875
GCGGCTGAACTAACTGGAGCTGATGTTACCGTGT
C   P T L I D L D Y N G T -
```

---

FIGURE 14-2



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1 ----- GACCACCCATAGATGATGAGTGCTTCTCTGCGCTTTGCTAGTCTTCCACCACTCCACCACCAACCC 60  
 CTGGTGGGTATCTACTACCGAAGACAGCGGGAACAGATCAGAAGGGTGGAGGTGGTGTGG  
 M A S L A L S S L P T S T T T -  
 61 ----- AAAAAACCCCTTATTTTCCAAAACATCTCTGCCATGTTAAGCCATTCCATCGCTTCAAAGTT 120  
 TTTTTTGGGAATAAAAGCTTTTGTAGGAGCGTACAATTGGGTAAAGGTAGCGAAGTTTCAA  
 K K P L P S K T S S H V K P P H R P K V -  
 121 ----- TCATGCAATGCACCCGCTGATAACAAATGACAAACCGTCAATAATTCTGATACCCCAAG 180  
 AGTACGTTACGTGGGGGACTATTGTTACTGTTTTGGCAGTTATTAAGACTATGGGGTTTC  
 S C N A P A D N N D K T V N N S D T P K -  
 181 ----- CTCATACTACCCAAACACCACTTGAAACGCGAGAACGTAGACAGGAGAAACTTGCTTCTG 240  
 GAGTATGATCGGCTTTTGTGGTGAACCTTTGCGTCTTGCACTCTCTCTCTTTGAACGAAGAC  
 L I L P K T P L E T Q N V D R R N L L L -  
 241 ----- GGACTCGGAGGTCTCTACGGCGCTGCCAACTTGACGACCATTTCGTCAGCCTTTGGCAAT 300  
 CCTGAGCCTCCAGAGATGCCGCGACGGTTGAACCTGCTGGTAAAGGCAGTCGGAACCGGTAA  
 G L G G L Y G A A N L T T I P S A F G I -  
 301 ----- CCCATCGCTGCTCCAGACAATATTTTCAGACTGTGTGCTCGGACTTCAAACCTAAGGAAC 360  
 GGGTAGCGACGAGGTCTGTTATAAAGCTTGACACAACGACGCTGAAGTTTGGATTCTCTG  
 P I A A P D N I S D C V A A T S N L R N -  
 361 ----- AGCAAAGACGCTATAACGGGACTAGCGTCTTGTCTCCGGTGCTTTCAACAAACAAACCA 420  
 TCGTTTCTGCGATATCCCTGTATCGCACAAACAGGAGGCCACGAAAGTTGTTTGTGTTGGT  
 S K D A I R G L A C C P P V L S T N K P -  
 421 ----- ATGGATTACGTCTCTCTTCAAACCCCTGTGATTCTGTGTTGACCACTGCGACAGAAAGCC 480  
 TACCTAATGACAGGAAGGAAGTTTGGGACACTAAGCACAAGCTGGTTCGACGTGCTTTTCGG  
 H D Y V L P S N P V I R V R P A A Q K A -  
 481 ----- ACTGCCGATTACACTGCTAAGTATCAACAAGCAATTCAAGCCATGAAGGATCTCCCCGAG 540  
 TGACGGCTAATGTGACGATTCTAGTTGTTCTGTTAAGTTCCGTACTTCTAGAGGGGCTC  
 T A D Y T A K Y Q Q A I Q A M K D L P E -  
 541 ----- GACCACCCACATAGCTGGAAGCAACAAAGCAAGATTCACTGTGCTTATTGCAACGGTGGT 600  
 CTGGTGGGTGTATCGACCTTCGTTGTTCCGTTCTAAGTGACACGAATAACGTTGCCACCA  
 D H P H S W K Q Q G K I H C A Y C N G G -  
 601 ----- TACAATCAAGAACAAAGTGTTTACCCGAATTTACAACCTTCAGATTACAACTCATGGCTC 660  
 ATGTTAGTTCTTCTTTTACCAATGGGCTTAAATGTTGAAGTCTAAGTGTGAGTACCGAG  
 Y N Q E Q S G Y P N L Q L Q I H N S H L -  
 661 ----- TTCTTTCTTTTCCACCGGTGGTACCTCTATTTCTACGAGAAGATATTGGGGAAGTTGATT 720  
 AAGAAAGGAAAGGTGCCACCATGGAGATAAGATGCTCTTCTATAACCCCTTCAACTAA  
 F F P F H R W Y L Y F Y E K I L G K L I -  
 721 ----- AATGATCCAACTTTGCTCTACCTTACTGGAACCTGGGATAACCCCTACTGGAATGGTTATT 780  
 TTACTAGGTGAAAAGCGAGATGGAATGACCTTGACCTTATGGGATGACCTTACCAATAA  
 N D P T F A L P Y W N M D N P T G M V I -  
 781 ----- CCTGCCATGTTGGAAACAGAACGTAACCAACTCTCTGTTTGGACCTTTAAGGSAATGCC 840  
 GGACGGTACAAAGCTTGTCTTGTGCTTTTGTGATTGACAGACAAACTGGGAAATTCCTACCG  
 P A H F E C N S K T N S L F D P L R D A -

### FIGURE 15-1

841 AAACACCTCCCACTTCTATCTTTGATGTTGAATATGCTGGTGCAGACACTGGTGCCACT 900  
 TTTGTGGAGGGTGAAGATAGAACTACAACCTTATACGACCACGCTGTGACCACGGTGA  
 K K L P P S I F D V E Y A G A D T G A T -  
 901 TGTATAGACCAGATAGCCATTAACTGTCTTCAATGTACAGACAGATGGTCACCAACTCC 960  
 ACATATCTGGTCTATCGGTAATTAGACAGAAGTTACATGTCTGTCTACCACTGGTTGAGG  
 C I D Q I A I N L S S M Y R Q M V T N S -  
 961 ACTGATACAAAACGATTCTTCGGTGGCGAATTTGTAGCTGGAAATGACCTCTTGGGAGC 1020  
 TCACTATGTTTTGCTAAGAAGCCACCGCTTAAACATCGACCTTTACTGGGAGAACGCTCG  
 T D T K R F F G G E F V A G N D P L A S -  
 1021 GAGTTCAACGTAAGCTGGGACCGTAGAAGCTGGGGTTACACTGCGGCTCACCCTGGGGTG 1080  
 CTCAGTTGCATCGACCTGGCATCTTCGACCTCCAACTGTGACGCTGAGTGGGACCCAC  
 E F N V A G T V E A G V H T A A H R W V -  
 1081 GGTAATTCTAGGATGGCCAACAGCGAAGACATGGGGAACCTTCTACTCCGCAGGATATGAT 1140  
 CCATTAAGATCTACCGGTTGTGCTTCTGTACCCCTTGAAGATGAGGGCTCTTACTACTA  
 G N S R M A N S E D M G N F Y S A G Y D -  
 1141 CCTCTCTTTTACGTCCACCATGCGAATGTGACAGGATGTGGCAAATCTGGAAAGATATT 1200  
 GGAGAGAAAAATGACAGGTGGTACGCTTACAGCTGTCTACACCGTTTAGACCTTTCTATAA  
 P L F Y V H K A N V D R H W Q I W K D I -  
 1201 GACAAGAAGACACACAAGGATCCGACCTCTGGCGACTGGCTTAAATGCATCATACGTGTTT 1260  
 CTGTTCTTCTGTGTGTTCTTAGGCTGGAGACCGCTGACCGATTACGTAGTATGCCAAAA  
 D K K T H K D P T S G D W L N A S Y V F -  
 1261 TACGATGAGAATGAAAAATCTTGTACGTCTTACAACCGAGACTGTGTAGACATTAATCGG 1320  
 ATGCTACTCTTACTTTTAGAACATGCACAGATGTTGGCTCTGACACATCTGTAATTAGCC  
 Y D E N E N L V R V Y N R D C V D I N R -  
 1321 ATGGGATATGACTACGAAAGGTCAGCAATCCCATGGATCCGTAGTGGGCGGACTGCACAT 1380  
 TACCTTACTATGATGCTTTCCAGTCTTAGGGTACCTAGGCATCAGCCGGCTGACGTGTA  
 H G Y D Y E R S A I P W I R S R P T A H -  
 1381 CGGAAGGGGGCGAACGTTGCTGCTAAGTCTGCTCGAATCGTGCAGAAGGTGGAGGATATC 1440  
 CGCTTCCCGCGCTTCCAACGACGATTGACGACCTTAGCAGCTTCTCCACCTCCTATAG  
 A K G A N V A A K S A G I V Q K V E D I -  
 1441 GTATTCCCGCTGAAGTTAAACAAGATAGTGAAGGTTCTAGTGAAGAGGCCAGCTACAAAC 1500  
 CATAAGGGCGACTTCAATTGTTCTATCACTTCCAAGATCACTTCTCCGCTCGATGTTTG  
 V F P L K L N K I V K V L V K R P A T N -  
 1501 AGGACCAAGGAGGGAAGGAGAAAGCAAAATGAGCTGTTGTTCTGCAATGGAATCAGGTTT 1560  
 TCCTGGTTCTTCCCTTTCTCTTTCTGTTTACTCGACAACAAGCACTTACCTTACTGCAAA  
 R T K E G K E K A N E L L F V N G I T F -  
 1561 GATGCTGAGCGGTTTCTAAAGATTGACGTTGTTGTCAACGACGCTGACGATGGAATTACG 1620  
 CTACGACTCGCCAAAGATTCTTACTGCACAAAACGTTGCTGACGCTGCTACCTTAAGTG  
 D A E R F L E I D V F V N D V D O G I Q -  
 1621 ACCACCGCTGCTGATAGTGAATTTCTGGTGGTTCGACAGTTGCCACATAACCATGGC 1680  
 TGGTGGGACGACTATCACTCAAAACGACCATCAAGCGGTGCAACGTGTATTGGTACCCG  
 T T A A D S E F A G S F A Q L P H N H G -

FIGURE 15-2

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```
1681 GACAAGATGTTTATGAGGAGTGGGGCAGCGTTCCGGATCACGGAGCTCTTGGGAAGACATT 1740
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
CTGTTCTACAAATACTCCTCACCCCGTCGCAAGCCCTAGTGCCTCGAGAACCCTTCTGTAA
D K M F M R S G A A F G I T E L L E D I -
1741 GAAGCTGAAGGTGATGACTCTGTTCTGTGACATTGGTGCCGAGAACAGGGTGTGATGAA
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
CTTCGACTTCCACTACTGAGACAACAACACTGTAACCACGGCTCTGTGCCACACTACTT 1800
E A E G D D S V V V T L V P R T G C D E -
1801 GTAAC TATTGGCGAGATCAAGATT CAGCTGGTTCCCATTTGTTTAAAGTCTATTGAAGTAA
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
CATTGATAACCGCTCTAGTTCTAAGTCGACCAAGGGTAACAAATTT CAGATAACTTCATT 1860
V T I G E I K I Q L V P I V *
1861 TGCATTTTCAATTGTCATTAGTATGCATGGGTACGTAAATCTGTTCCGTGCTGCTGGTTATC
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
ACGTAAAAGTTAACAGTAATCATACGTACCCATGCATTTAGACAAGCGACAGACCAATAG 1920
-
1921 GAGGATTTTGTATGTTCTCGTAACCAATAATAAGGATTGTCATTCCATGTTTGGAAATCG
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
CTCCTAAAAACTACAAGAGCATTGGTTTATTATTCTTAACAGTAAGGTACAAACCTTAGC 1980
1981 TGTAACCGCAGGCATGCATATGTTTGATTGTTATTTTACTTGAAGCACTTCTGTTTATG
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
ACATTGGCGTCCGTACGTATACAACTAACAAATAAAAAATGAACCTTCGTGAAGACAAAATC 2040
2041 TAAAAAAAAAAAAAAAAA
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
ATTTTTTTTTTTTTTTT 2057
```

FIGURE 15-3